

## ***PRA Application Supporting Statement***

**OMB Control #0693-0078**

**Expiration Date: 07/31/2022**

**NIST Generic Clearance for Community Resilience Data Collections**

### **HURRICANE MARIA EMERGENCY COMMUNICATIONS INVESTIGATION: INFORMATION PROVIDERS INTERVIEW**

#### **FOUR STANDARD SURVEY QUESTIONS**

##### **1. Explain who will be surveyed and why the group is appropriate to survey.**

The National Institute of Standards and Technology (NIST) has the responsibility to investigate cases of serious failures of the built environment (buildings and infrastructure) under the National Construction Safety Team Act, signed into law in 2002<sup>1</sup>. Members of the National Construction Safety Team (NCST) based at NIST were tasked in early 2018 with the investigation of impacts from Hurricane Maria, which hit Puerto Rico on September 20, 2017. NCST duties include:

1. *“...establish the likely technical cause or causes of the building failure;*
2. *evaluate the technical aspects of evacuation and emergency response procedures;*
3. *recommend, as necessary, improvements to building standards, codes, and practices based on the findings;*
4. *recommend any research and other appropriate actions needed to improve the structural safety of buildings, and improve evacuation and emergency response procedures, based on the findings of the investigation.”*

NIST is conducting multiple projects that represent all of these areas for investigation. However, the interview for which this application is written pertains to the second and fourth duties of the NCST listed above. The goal of this specific portion of the investigation is to better understand decision making around emergency communication with the public, as well as procedures, policies, and guidelines for evacuation. This investigation is not considered research, but is instead a fact-finding mission to establish the role that emergency communication played in effective or ineffective evacuation behavior as well as other protective actions. The purpose of NCST investigative activities is to make recommendations, based directly on findings, that can help prevent future deaths and injuries across the United States.

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1 [https://www.nist.gov/system/files/documents/public\\_affairs/releases/hr46871.pdf](https://www.nist.gov/system/files/documents/public_affairs/releases/hr46871.pdf)

To complete this investigation, NIST has partnered with contractors who can utilize trained personnel local to Puerto Rico to complete data collection activities. Among other data collection activities (which will have their own PRA applications), information provider interviews will be conducted with 35 adults across professions involved in the development and dissemination of emergency information relevant to Hurricane Maria. NIST personnel, in consultation with subject matter experts, have developed a list of primary and backup emergency communications professionals, or “information providers” present in Puerto Rico or involved in hurricane forecasting at the time of Hurricane Maria. These professionals (both the primary contacts and their corresponding back-ups) were selected to be representative of the various facets of hurricane emergency communication, and include: members of the media, emergency managers, meteorologists, and also government personnel responsible for public-facing communication. Relevant areas of knowledge and expertise represented in this stratified interview sample include: weather, weather forecasting, natural hazards impacts, the availability of public shelters, translation of information about cascading risks from the hurricane (such as impassable roads), and suggested or mandatory protective action behaviors. Taken together, we are confident that the final sample of 35 professionals will give us a thorough and representative picture of official emergency communication related to Hurricane Maria.

These information provider interviews will help to contextualize and characterize emergency message dissemination, organizational interactions and constraints, as well as the identification of areas that can better facilitate communication effectiveness. This interview is a key component among two related future data collection activities, including surveys and interviews with the public (which will each have their own PRA applications), and will help to provide baseline information required to better interpret the public’s responses to Hurricane Maria. The process to understand the emergency communication and information environment prior to, during, and immediately after Hurricane Maria is a critical component required to successfully complete our previously described duties under the NCST.

## **2. Explain how the survey was developed including consultation with interested parties, pre-testing, and responses to suggestions for improvement.**

The interview instrument was developed by NIST scientists with backgrounds in sociology, anthropology, communications, and psychology through a series of development and quality control activities. First, a review of literature regarding hurricane risk communication was conducted to better understand the typical source and channels utilized for emergency message dissemination.

Next, after a draft interview guide was developed, NIST investigators elicited informal feedback from numerous content experts in hurricane forecasting, emergency communication, and evacuation behavior from experts at The National Oceanic and Atmospheric Administration (NOAA), as well as academic colleagues from across the U.S. with related interests. Key areas of inquiry include where and how hurricane information was obtained, how warnings were disseminated to the public, and how agencies and organizations communicated with one another. Additional revisions were made that grouped and focused questions more appropriately to each respondent type (e.g. meteorologists; emergency managers) based on the professional background of the individual targeted. For example, experts at the National Hurricane Center will be asked for detailed questions related to their area of expertise, which is forecasting. As a result, while there are six interview guides in total, all are based on the same underlying question architecture with modifications to better establish rapport with interviewees. The six interview types are: a) media-based professionals, b) National Hurricane Center representatives, c) Weather Service & other forecast personnel, d) mayors and/or mayoral representatives, e) emergency providers and other government representatives, and f) school and medical administrators.

Then, NIST personnel disseminated the revised interview questions to colleagues in Puerto Rico, and also professional interviewers among the contractor's staff, for further refinement. A final round of revisions was made focusing on details of the content, including issues with relevance of wording to particular interviewees and the appropriate level of detail sought in responses. We are confident that our contractors have well-developed tools with which to gather information from key information providers.

**3. Explain how the survey will be conducted, how customers will be sampled if fewer than all customers will be surveyed, expected response rate, and actions your agency plans to take to improve the response rate.**

Interviewees were selected based on NIST personnel associations and knowledge of networks in Puerto Rico, as well as input from: Puerto Rican colleagues and contacts made in the course of field visits, subject-matter expert colleagues, as well as insights from our locally-based contractors. The stratified purposive sample will be conducted with 35 individuals across the interview types identified above. For participation in the information provider interviews, individuals will be contacted via mail or email with a formal invitation letter that explains the investigation and purpose of the interviews (see letter attachment). Then, interviewers in Puerto Rico will follow up via email or phone to request participation and set up a time for an interview via phone. The interviews are open-ended and semi-structured to enable respondents to provide

detailed information on their particular experience with, and process of, emergency communication message distribution.

If an individual does not agree to the interview, a backup individual with similar professional credentials and professional role (already identified on a backup list of interviewees) will be contacted. A minimum of two backups has been identified for each of the 35 interviewees expected to participate. If an individual agrees to provide feedback, an appointment for the hour-long interview will be created. At that time, the PRA statement will be read and permission will be sought for audio-recording of the interview. Interview questions will be read aloud by contractor interviewers over the phone. Participant's responses will be recorded using the CATI phone recording system. After completing the interview over the phone (see attached paper interview guides for what will be read by interviewers to respondents) interviewers will thank participants for their time.

Responses will be kept anonymous and will not be associated with names or other personally identifiable information. This is not a Privacy Act System of Records, therefore SORN and Privacy Act Statement are not applicable.

#### **4. Describe how the results of the survey will be analyzed and used to generalize the results to the entire customer population.**

The information provider interviews will be transcribed into English by the contractor and sent to NIST personnel for analysis. Utilizing a standard qualitative data software package, such as Atlas.ti, transcripts will be coded for key content areas. Then, the data can be queried for analysis to reveal key trends across the respondents, as well as to identify unique considerations that may be specific to one type of respondent. In addition, this software enables users to flag any surprising or novel findings that will enable refinement of our understanding to-date of the emergency information environment in Puerto Rico at the time of Hurricane Maria. While the lessons learned from each respondent will be unique, and richly qualitative, we are expecting through this work to be able to highlight those areas where professionals agree on needs for strengthening risk and/or protective action communications. We are confident that although the 35 professionals selected from our stratified sample will not provide statistically generalizable results, the common themes within and across strata will give us a representative picture of official emergency communication related to Hurricane Maria.

The purpose of an NCST investigation is to help prevent future deaths and injuries across the U.S. by recommending actions that can influence codes, standards, and practices. Lessons learned from Puerto Rico regarding the use and effectiveness of emergency communications, and

in particular their influence on evacuation behaviors, can be useful not only to better understand the impacts from this particular storm, but also can also be relevant for other hurricane prone regions and in other hazard conditions. For example, lessons learned by NIST's NCST investigation of the Joplin, M.O. tornado in 2006 have been applied to help standardize siren emergency communications across the U.S.

Associated Attachments:

- Cover sheet
- Invitation letter
- Instruments (6)

*The instruments have common elements but have been tailored to meet the needs of particular professions. Elements in common across the instruments include:*

- 1. script for Introduction*
- 2. Required script for PRA*
- 3. First section of questions, "Background Questions"*
- 4. Last section of questions, "Ending Questions"*
- 5. Section on "Inter-Agency Coordination"*

*All other sections are slightly different given the needs/relevance to particular respondent types.*